



Description of EP0855477

Print

Copy

Contact Us

Close

## Result Page

Notice: This translation is produced by an automated process; it is intended only to make the technical content of the original document sufficiently clear in the target language. This service is not a replacement for professional translation services. The esp@cenet® Terms and Conditions of use are also applicable to the use of the translation tool and the results derived therefrom.

The invention relates to a floor system with support rails and between these hung up plate shaped ceiling components to the formation of a suspended ceiling, whereby through notices of the single ceiling components the cavity of the rear suspended decks is accessible.

In order to arrive into the ceiling void, it is known to take the ceiling components out of the suspension and to turn lateral off at a partition wall or however at the floor. This is pedantic and requires certain time.

Further it is known to fold the ceiling components single downward whereby e.g. on a side of a ceiling component of pivotable mounted latches of the support rail dissolved it becomes so that the ceiling component on this side swivels downward, while it becomes so held on the opposite side in articulated mounted hook members at the support rail that the downward swung ceiling component can become increasing the opening in the floor system displaced along the support rail. With this known floor system different designed movable hanging up elements are to be attached at a ceiling component, whereby the production is relative expensive and so that also the manufacturing costs corresponding high lie.

The invention is the basis the object to train a floor system of the initially indicated type in such a way that the ceiling components with simple and thus inexpensive embodiment the accessible making of the cavity over the suspended decks at the support rails hung up or displaced to become to be able.

This essentially according to invention thereby achieved that, a support rail is provided also in a distance arranged bars longitudinal in longitudinal direction of the rail one above the other, at which hooks or hanging up elements at the single ceiling components will be hung up can.

Thereby it is e.g. possible, a ceiling component, to put out by tilting between two support rails in height direction and hang up in same way to under it or over it longitudinal bar at the support rail again, on which the ceiling component over and/or. the bottom other ceiling components in another plane displaced will can. The hanging up elements at the ceiling components can become here simple designed and essentially rigid mounted, whereby the production becomes simplified.

For example embodiments of the invention become subsequent more near explained on the basis the drawing. Show:

Fig. 1 in a perspective view a floor system with support rails and ceiling components in two various positions,

Fig. 2 a cross sectional view of a support rail also to it hung up ceiling components,

Fig. 3 a wall junction of the floor system,

Fig. 4 a perspective view of a ceiling component from above,

Fig. 5 a sectional view with two different positions of a ceiling component, and

Fig. 6 in a view corresponding Fig. 4 the suspension of a ceiling component at the support rails.

Fig. 1a shows next to each other between support rails 1 hung up ceiling components 2 plates elongated in form, whereby at the narrow sides of the ceiling components 2 hooks 23 (Fig. 2 and 3) formed is, which spread the upward angled end 4 of a bar 5 at the support rail 1. By raising and tilting, like in Fig. 1a by arrows indicated, can be taken out the ceiling components 2 between the support rails 1. In same way made hanging up of the ceiling components.

In a distance the bottom bar 5 with upward angled end portion, which runs along the support rail 1, is a second bar 6 with angled end portion 7 arranged, like this Fig. 2 significant shows. After that notices of a ceiling component 2 of the upper bar 5 this can be hung up at the lower bar 6, on which the ceiling component 2 the ' bottom still ceiling components hung up hung up down at the upper bar 5 can become 2 displaced along the support rail, like this in Fig. 1b by arrows indicated and in Fig. 2 by dashed rendering of the ceiling component shown hung up down is.

With the embodiment after Fig. 1 exhibits the support rail 1 a L-section 8, which becomes for example suspended by means of slope elements at a bare floor. At that horizontal located leg of this L-section 8 is a channel 9 by rivets or bolting fixed, as with 10 indicated is. The horizontal located legs of the channel 9 are upward angled. The widening of the floor system an other channel can become 9 so mounted at a L-section 8 that the horizontal located legs of the two closed-up channels 9 are away against each other.

Fig. 2 another embodiment of a support rail 1, which consists of an hollow profile, shows at whose both sides the horizontal distant legs 5 and 6 formed is. On the top of the hollow profile an upward open channel is 11 formed, whereby the thigh ends are 13 double inward angled. An only schematic suggested slope element 12, which can be for example fixed at a bare floor, seizes between the two thigh ends 13 of the channel 11 rising up inward and holds the support rail 1 in a predetermined distance of the bare floor.

Like Fig. 2 are the hooks show and/or. Hanging up elements 23 at the ceiling components 2 in the ratio to the distance of the bars 5 and 6 so arranged that when hanging up the ceiling components 2 at the upper bar 5 the underside of a ceiling component 2 essentially locks with the underside of the support rail 1.

With in Fig. the lower side edge 24 of the ceiling component 2 is appropriate for 2 shown embodiment in a short distance of the angled end 7 of the lower bar 6, so that 1 displaced between them the hook 23 of a ceiling component 2 hung up under it can become along the support rail.

With the embodiment after the Fig. the ceiling component 2 essentially consists 2 and 3 of a metal sheet with angled edge portions, which form the side walls, whereby the side walls 3 are upward somewhat extended and the free edge is 23 outward angled to the formation of the hook.

The hooks and/or. Hanging up elements 23 at the ceiling components 2 can become in simple manner by the fact formed that with a ceiling component 2 is break formed hook shaped continuous from sheet metal the side wall 3 for hanging up at the inertial rail.

Likewise it is also possible to plan at a ceiling component 2 in sections hooks 23 or such a thing by means of which a ceiling component at the

inertial rail 1 is hung up. So for example an hook can become 23 formed in each case at the front and rear end of a ceiling component 2.

Preferably the hook 23 lies somewhat outside of the bottom edge 24 of a ceiling component 2, so that a short distance between the bottom edge of a ceiling component 2 and the adjacent free end of a bar 5 and/or. remains to 6. With the illustrated embodiment for this the side wall 3 of a ceiling component is 2 somewhat outward inclined, like this Fig. 2 and 3 shows. Thereby remains when shifting the ceiling component 2 hung up down ' in Fig. 3 sufficient place, so that the hook between the end of the bar 6 and the side edge 24 of the above ceiling component can become 2 displaced. It is however also possible to lay the height dimension out of the ceiling components 2 in the ratio to the distance of the bars 5 and 6 and reverse in such a way that the side edge 24 of the ceiling components is 2 like that 6 arranged over the lower bar that on the two different planes the hooks and/or. Hanging up elements 23 of the lower ceiling component not with the underside upper ceiling component colliding, even if no considerable distance between bottom edge 24 of a ceiling component 2 and free end of a bar 5 and/or. remains to 6.

Fig. shows 3 a wall junction of the floor system, whereby the support rail is 1 intermediate layer of a gypsum fiber board 15 fixed bottom with only single formed bars 5 and 6 at a L-section 14. The L-section 14 is 16 fixed at a wall. With this embodiment the support rail 1 consists of a channel, whose upper leg serves 14 for fastening to the L-section, while the lower leg at the free end is 23 upward angled to the receptacle of the hooks. Into the channel a Z-profile is inserted, whose leg serves for fastening to the channel, while the opposite upward rising up legs 2 provided for hanging up the ceiling components is.

The ceiling components 2 can be for example from a punched metal sheet formed, arranged in which a layer is 17 from mineral wool, which is 18 covered at the sides and of gypsum cardboard strips above. With 19 a self adhesive Moltopren strap is shown, which is to the seal between the top of a ceiling component 2 and the above structure provided, which consist cases in this of a Fermazel strip 20. On both sides the sealing strip 19 strips are 21 mounted, which can to exist for example out during heat effect up-foaming material and be able to the other seal in the case of fire provided to be. With the shown embodiment also that is the support rail 1 supporting L-section 14 with a gypsum cardboard strip 22 covered.

With the shown embodiment the ceiling components 2 in the normal position at the upper bar 5 of the support rail 1 are hung up and hung up for shifting along the support rail at the lower bar 6. Likewise it is possible to hang up and for shifting shift the ceiling components upward at the lower bar in the normal condition.

The ceiling components can consist of metal or also of another building material. The floor system can become as fire protection cover formed. It can likewise without fire protection requirements bspw. as cool cover formed its.

Single hooks 23 and/or. corresponding hanging up elements can be at the ceiling component 2 by rivets or screwing fixed or direct on to this formed, for example by a sheet metal punching out.

Fig. another embodiment of the suspension at a ceiling component 2, which is in a perspective view from above shown and from a metal sheet with angled edge portions 28, 30 formed, shows 4. At the sides of the ceiling component, becomes arranged at which an adjacent ceiling component, the edge portions 28 are upward and inside bent, whereby they are provided in the area of the suspension at the corners with a cutout 29 in each case. The side surfaces planned for the suspension exhibit one upward and inside angled edge portion 30, whose edge is to a downward open U with 31 angled. Vicinity of each corner of the ceiling component 2 is a hanging up handle 32 mounted, that from the Fig. 5 and 6 apparent form has.

During with the embodiment after the Fig. 1 to 3 the side walls 3 of a ceiling component 2 upward extended and outward inclined arranged and/or. angled are, are with the embodiment after the Fig. 4 to 6 the edge portion 30 of the ceiling component 2 of rectangular angled, whereby the upper edge of the edge portion 30 with that of the remaining ceiling component aligns, so that an uniform height results, like Fig. 5 shows. In place of an inclination or a bending of the side wall 3 in Fig. 2 and 3 is with the embodiment after the Fig. 4 to 6 the hanging up handle 32 outward angled, whereby as a result of bending the edge an outward directed hook 33 arises.

The support rails 1 in Fig. 5 and 6 exhibits a rectangular hollow profile 40, as with the embodiment after Fig. 1 at a L-section 8 by means of screws fixed is. To to corner of the rectangular hollow profile 40 the two legs 34, 35 before the corner and then end are inward so angled are that two hang up-planar result, those the bars 5 and 6 in Fig. 2 and 3 corresponds. Into the Fig. 5 and 6 down located, horizontal legs 34 is for instance in the center of the width dimension with the edge 36 upward angled, during the opposite, vertical legs 35 in a distance of the lower leg 34 inward and above u-shaped angled is. The two edges 36, 37 at the two thigh ends, rising up upward, have a distance in horizontal direction from each other, that it allowed to slide the hanging up handle 32 with the u-shaped inward angled edge 31 of the ceiling component 2 into the hollow profile like this from Fig. 5 comes out.

Fig. the ceiling component 2 shows 6 in the normal hanging up position, in which the u-shaped are hung up inward angled edges 31 of the ceiling component 2 at the u-shaped inward and angled above edge 37 of the vertical leg 35 of the hollow profile. The horizontal located lower legs 34 of the hollow profile lies thereby on the same height as the view-planar of the ceiling component 2, whereby a shade joint 38 between the edge of the ceiling component and the edge of the lower leg 34 of the support rail 1 remains. In this normal hanging up position the bracket 32 without function rises up into the cavity of the support rail.

Slopes of the ceiling component 2 this so far lifted becomes that those become released upward inward and down u-shaped of angled edges 31 of the ceiling component of that u-shaped angled edge 37 of the vertical leg 35, on which by dumps of the ceiling component and by lateral shifting this as lowered can become that the hooks 33 the bracket 32 at the edge 36 of the lower leg 34 rising up upward are hung up, as this Fig. 5 with 2 ' shows. In this position a lowered ceiling component 2 can become ' along the support rails 1 displaced, without adjacent, in the normal hanging up position of finding ceiling components 2 out or suspended to become to have, like this also from Fig. 5 comes out. The lowered ceiling component 2 ' can do relative to the upper, in which normal hanging position remaining ceiling component 2 without impairment of this displaced become.

The simpler illustration because of are in the Fig. 5 and 6 support rails 1 for an edge connection shown. For a support rail corresponding in Fig. 2 becomes the hollow profiles mirror-image doubled, so that 32 present on opposite sides an opening of the hollow profile is to the insertion of the angled edge 31 of the ceiling component with bracket in each case.

The brackets 32 can become loose and separate by the ceiling components 2 to a construction site supplied, in order with the assembly at the ceiling component by a not represented hanging up mechanism to be then only hung up. It is also a fixed connection between brackets 32 and ceiling component 2 in the form of rivets, screws, Verklin or such possible.

In place of the represented brackets 32, which are bent from a metal strip, brackets can become 32 formed also from bent wires. The amount of bending at the bracket 32 essentially corresponds itself the width of the shade joint 38, as from Fig. 5 and 6 results in. In place of represented triple bending at the bracket 32 its upper portion also oblique can run outward and end in the hook 33.

With the two-piece embodiment of the support rail 1 from hollow profile 40 and Winkelprofil 8 after the Fig. 5 and 6 the screw connection between these two elements of a support rail for balance purposes used can become, in order the level of the two hang up-planar relative other support rails, which are for example fixed at a bare floor, adjusts to be able. For this for example washers can become between the two elements 8 and 40 inserted.